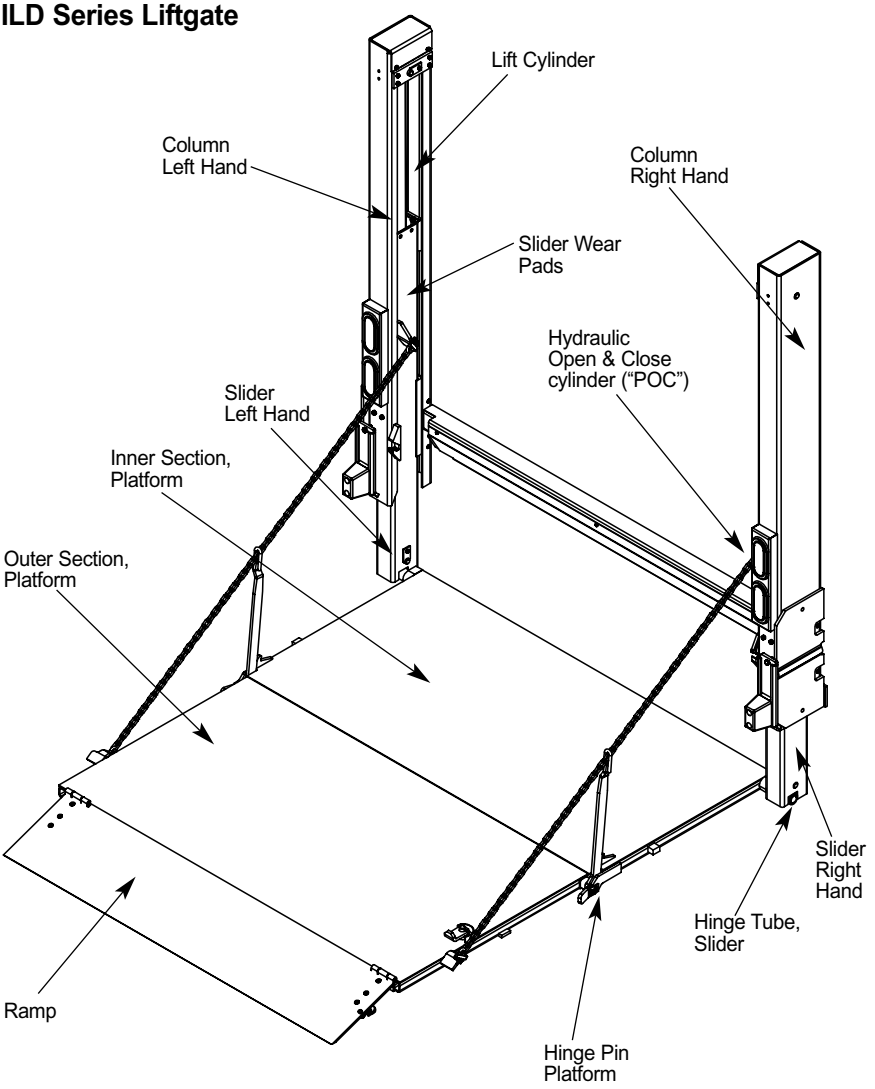
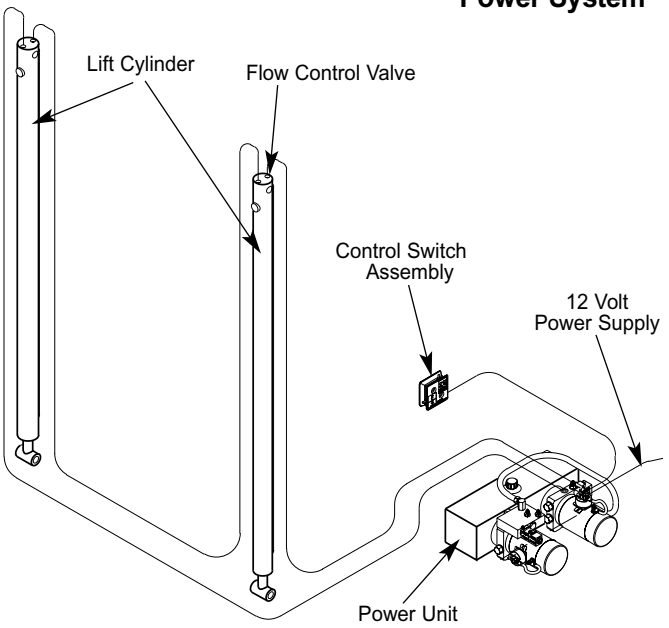
Design Detail

ILD Series Liftgate



Design Detail

Power System



1. PREVENTIVE MAINTENANCE

1.1 Essential Maintenance

We strongly recommend that operators use our preventive maintenance schedule as a means of keeping their liftgate running at its best. We recommend that the **Daily Overall Inspection** should be performed by the operator each day. As well, we recommend that the operator perform the **Periodic Lubrication** according to the chart on page 11. The **Routine Maintenance Inspection** should be performed semi-annually by an Authorized Service Center. Performing **Daily Overall Inspection** and **Periodic Lubrication** and having semi-annual **Routine Maintenance Inspections** performed, should ensure years of safe, trouble free operations.

The operator's first visit to an Authorized Service Center should occur once the liftgate has been in operation for 30 days. The importance of this initial inspection is to make sure that everything is working properly during this break in period. Once this is complete, we recommend that the operator return semi-annually to his or her Authorized Service Center for performance of the Routine Maintenance Inspection.

1.2 Daily Overall Inspection

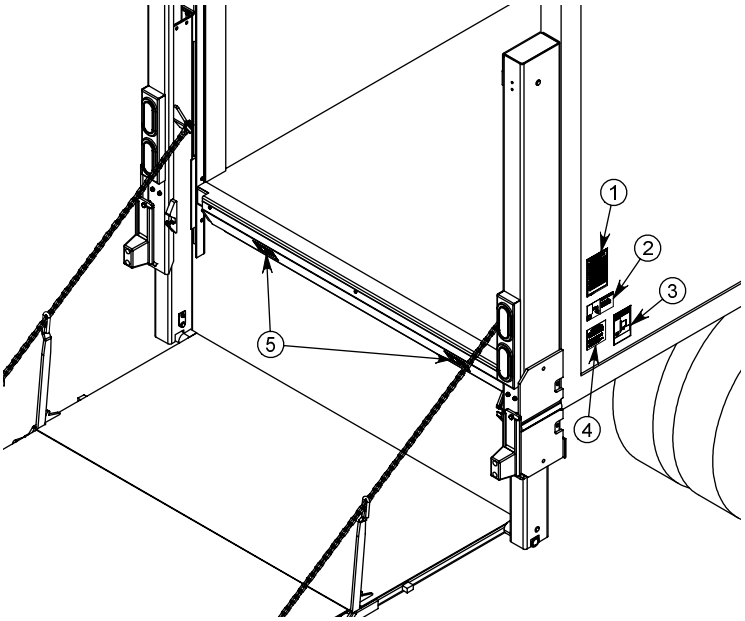
STEP 1 Run liftgate through its entire cycle daily. Check for any unusual noises coming from the liftgate or related items such as the power unit.

STEP 2 Inspect liftgate for missing or loosened fasteners, broken welds, signs of overload, hydraulic leaks and that pins are in place and secured.

Any defects need repair immediately. Contact your Authorized Service Center.

1.2 Daily Overall Inspection

STEP 3 Check that all warning decals are in place and legible.
Any missing or damaged decals need replacement immediately.



1. Operating Instructions
2. Warning Keep Clear
3. Warning Maximum Load Capacity
4. Urgent Warning
5. Warning Liftgate Can Crush

You may obtain free replacement decals (See **page 17** for detailed description of decals) by phoning us at **888-774-5844** in **USA**. Have your liftgate model # and serial # ready.

NOTE: Please fill out the chart provided, as a reminder that these steps have been completed daily. You will find a sample of this chart on the page that follows. Contact your employer to receive a copy to keep in your glove compartment.

1.3 Periodic Lubrication

Lubrication with lightweight machine oil should be performed at least monthly. Heavier usage will require more frequent lubrication consult the chart below. If you are in any doubt as to duty or number of cycles, lubricate more frequently.

Cycles per Day	Light Duty[1]	Medium Duty[2]	Heavy Duty[3]
Under 20	1 month	1 month	1 month
20-40	1 month	1 month	2 weeks
40-60	1 month	2 weeks	Weekly
Over 60	Consult factory	Consult factory	Consult factory

[1] Lowering rated load and lifting empty platform

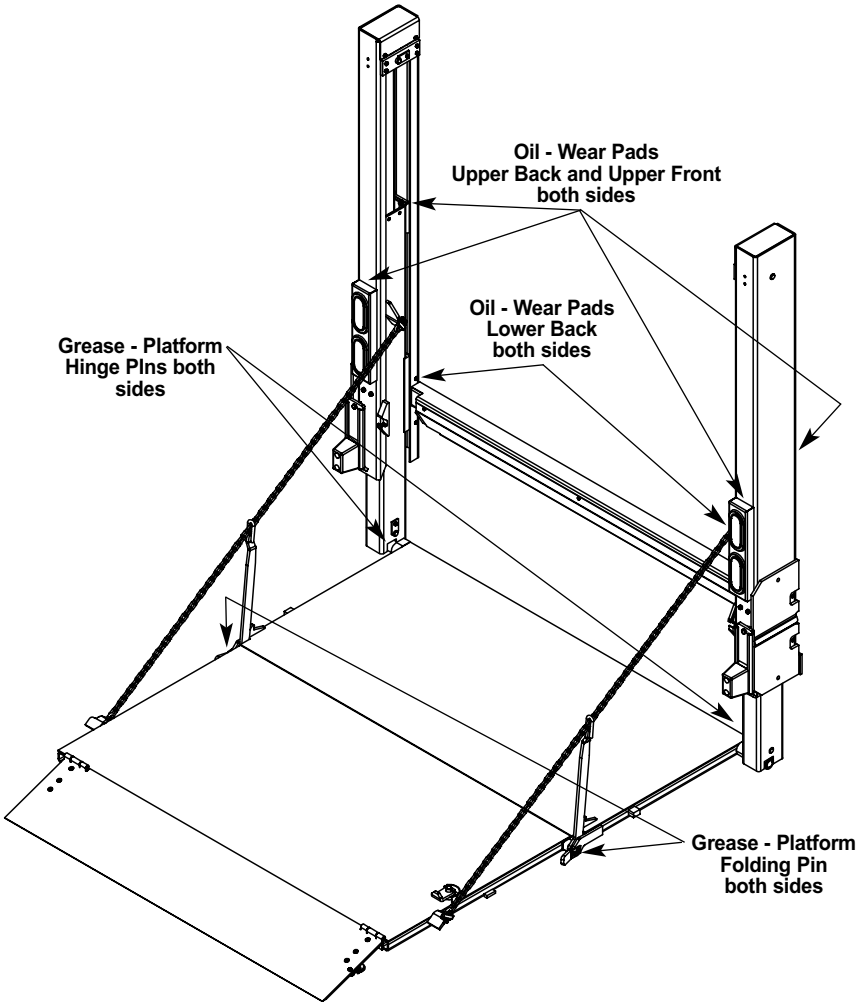
[2] Lowering rated load and lifting 1/2 rated load

[3] Lowering rated load and lifting

1.3 Periodic Lubrication

LUBRICATION DIAGRAM

Lubricate **only** the areas shown on the diagram below. Lubrication of any other areas will shorten the life of the area lubricated.



2. TROUBLE SHOOTING

Problem	Possible Cause	Remedy
Liftgate will not raise or raises slowly, **unloaded**	• Motor not running	• Check Master Disconnect is "ON" • Check that Circuit Breaker has not been tripped • Check for shorts, ground faults or open circuits, e.g., power lines connected to the ground or a broken cable or connection • In below freezing temperatures, check for frozen water accumulation in the motor housing • Check motor solenoid. Replace if non-functional • Check control switch. Replace if non-functional
	• Little or no hydraulic oil in the reservoir	• Fill with correct hydraulic fluid
	• No oil supply to cylinder	• Check for any broken or blocked hoses, valves or filters
	• Defective lift cylinder	• Check function. Replace if non-functional
	• Hydraulic flow valve on cylinders malfunctioning	• Check function. Replace if non-functional
	• Mechanical damage or obstruction	• Check for and remedy any damage or obstruction in sliders, track or path of travel of platform
	• Hydraulic oil thickened due to low temperature	• Change to lower viscosity hydraulic oil

2. TROUBLE SHOOTING

Problem	Possible Cause	Remedy
Liftgate will not raise or raises slowly, **loaded**	• Reduced hydraulic oil delivery to the cylinder	• Check voltage supply to motor. Minimum should be 10.5 volts under load. If voltage is too low, increase the power supply
		• Check for poor electrical connections
	• Ground Fault	• Check the ground from the chassis to the battery (minimum #4 battery cable)
		• Check the ground from the chassis to the motor (minimum #4 battery cable)
	• Liftgate overloaded	• Decrease load
	• Pump worn	• Have pump serviced or replace
	• Pressure relief valve out of adjustment	• Adjust
Liftgate will not raise to full height	• Insufficient oil in reservoir	• Fill with hydraulic oil
	• Air in hydraulic system	• Raise and lower the liftgate several times and then fill the reservoir with hydraulic oil
	• Mechanical damage or obstruction	• Check for and remedy any damage or obstruction in sliders, track or path of travel of platform

2. TROUBLE SHOOTING

Problem	Possible Cause	Remedy
Liftgate will not descend, or does so slowly	• Motor not running	• Check Master Disconnect is "ON"
		• Check that Circuit Breaker has not been tripped
		• Check for shorts, ground faults or open circuits, e.g., power lines connected to the ground or a broken cable or connection
		• In below freezing temperatures, check for frozen water accumulation in the motor housing
		• Check motor solenoid. Replace if non-functional
		• Check control switch. Replace if non-functional
	• Little or no hydraulic oil in the reservoir	• Fill with correct hydraulic fluid
	• No oil supply to cylinder	• Check for any broken or blocked hoses, valves or filters
	• Defective lift cylinder	• Check function. Replace if non-functional
	• Hydraulic locking valve on power unit malfunctioning	• Check function. Replace if non-functional
	• Mechanical damage or obstruction	• Check for and remedy any damage or obstruction in sliders, track or path of travel of platform
	• Hydraulic oil thickened due to low temperature	• Change to lower viscosity hydraulic oil

2. TROUBLE SHOOTING

Problem	Possible Cause	Remedy
Liftgate will not descend, or does so slowly (cont.)	• Hydrauilic locking valve stuck	• Check for poor electrical connections
	• Reduced hydraulic oil delivery to the cylinder	• Check voltage supply to motor. Minimum should be 10.5 volts under load. If voltage is too low, increase the power supply
	• Ground Fault	• Check the ground from the chassis to the battery (minimum #4 battery cable)
		• Check solenoid for proper operation
		• Clean or replace control valve
Liftgate creeps down while the platform is in the unfolded position	• Leaks in the hydraulic system	• Check all hoses, connections and control valves; replace or service any faulty parts
	• Worn lift cylinder(s)	• Check cylinder packing. Replace if necessary
		• Check cylinder for scoring. Replace if necessary
	• Hydraulic locking valve on power unit defective	• Clean or replace
		• Check plunger assembly for proper adjustment
		• Check for short circuit at valve pin
	• Electrical short circuit	• Check for electrical short circuit.

2. TROUBLE SHOOTING

Problem	Possible Cause	Remedy
Liftgate descends unevenly	• Defective flow control valve on passenger side cylinder	• Replace
	• Defective lift cylinder	• Replace
Liftgate vibrates up and down while lifting	• Mechanical damage or obstruction	• Check for and remedy any damage or obstruction in sliders, track or path of travel of platform
	• Defective lift cylinder	• Check function. Replace if non-functional
	• Air in system	• Lower platform to ground and fill reservoir. Now raise and lower the platform several times. Refill reservoir if necessary
	• Tank breather is plugged	• Unplug breather
	• Low pressure feed to pump is restricted	• Remove restriction
Excessive battery discharge	• Alternator/generator not working properly	• Service or replace • Check battery water level frequently
	• Frequent use with insufficient charging time	• Avoid use for frequent short periods without allowing adequate recharging time. Do not use liftgate with engine off
	• Defective battery	• Replace battery
	• Defective pump motor	• Replace motor

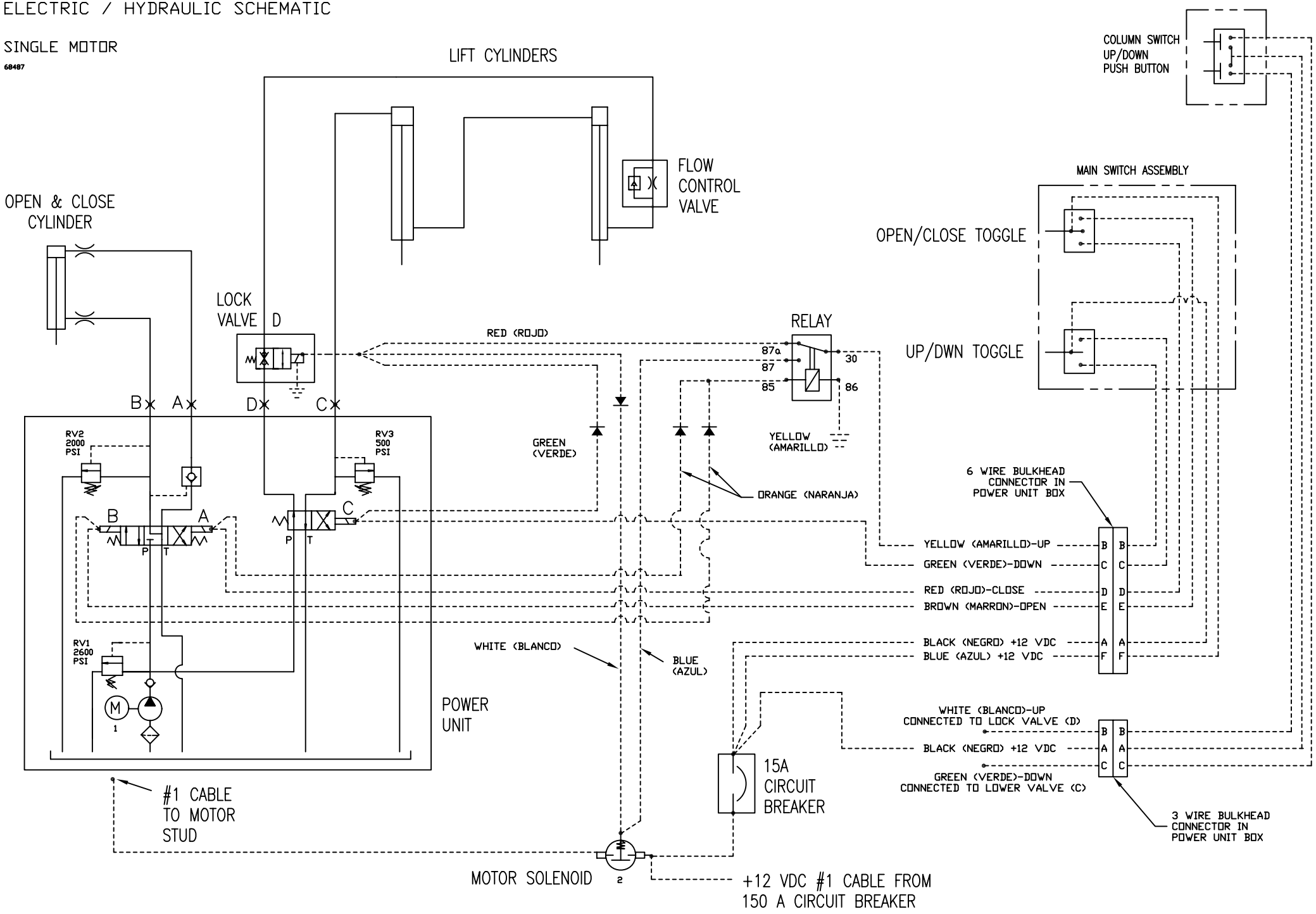
2. TROUBLE SHOOTING

Problem	Possible Cause	Remedy
Overflowing through reservoir breather	• Over filled reservoir	• Drain to proper volume
	• Air in system	• Raise and lower the platform several times, refill if necessary
Platform will not open or close, or does so slowly	• Hydraulic system fault	• Check hoses for kinks or sharp bends and reroute if necessary
	• Orfice in fitting on open/close cylinder is plugged	• Check to make sure orifice is not blocked at POC cylinder end
		• Check POC cylinder seals. Replace if defective
	• Defective power unit	• Check valves on power unit for function
		• Check electrical wiring for sufficient current (min. 10.5 volts) to valves
		• Check electrical connections
	• Ground Fault	• Check the ground from the chassis to the battery (minimum #4 battery cable)
		• Check the ground from the chassis to the motor (minimum #4 battery cable)

ELECTRIC / HYDRAULIC SCHEMATIC

SINGLE MOTOR

68487



ELECTRIC / HYDRAULIC SCHEMATIC

DUAL MOTOR

68486